SCIENTIFIC NOTE
Mediterranean Fruit Fly, *Ceratitis capitata* (Wiedemann), Reared from Fruit of *Prunus ilicifolia* (Nutt.) Walp. in Hawaii[1]

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ABSTRACT. During August 1990, six individuals of a native California chaparral tree, *Prunus ilicifolia* (Nutt.) Walp., were found growing at 6,600 ft. elevation at Pohakuloa, Hawaii Island. Two collections totaling 1,224 ripe fruit, made from these trees during September and November, yielded 1,649 mature larvae which produced 1,566 adults of the Mediterranean fruit fly, *Ceratitis capitata* (Wiedemann). The average yield of Medfly adults/kg fruit was 277.13, indicating that *P. ilicifolia* is an excellent host for this pest. This finding may have implications for future Medfly eradication or control programs in California since *P. ilicifolia* is a widely distributed element of mesic chaparral communities there.

Prunus ilicifolia (Nutt.) Walp., commonly called holly-leaf cherry or islay, is a small tree or large shrub which is an indigenous component of mesic chaparral plant communities in California (Hanes 1981). The ripe fruit of this plant, a thin-fleshed large-seeded drupe about 1.5 cm long, is borne in clusters and is generally present during late summer through fall (August-November).

Because of our interest in the possibility that the Mediterranean fruit fly, *Ceratitis capitata* (Wiedemann), might be able to survive in California in fruit of native chaparral plants, we were pleased to discover during August, 1990, six small trees of this species near Pohakuloa State Park on the island of Hawaii, at about 6,600 feet elevation. These trees apparently were planted sometime during the 1950's or before by the then Territorial Division of Forestry.

A single semi-ripe fruit was secured by us on August 9, 1990, and it eventually produced two fruit fly maggots in our laboratory. On September 19 we returned to Pohakuloa where we collected over 1.5 kg of ripe fruit and semi-ripe fruit. More than half of these fruit were infested with Medfly larvae. A second collection of over 4 kg of fruit was made at this site on November 27. Fruit were hand-carried to Honolulu and held in the laboratory in closed containers over fine vermiculite for larval emergence and pupation. Emergence data are summarized in Table 1.

These data indicate that *P. ilicifolia* is an excellent Medfly host. The combined average yield of Medflies per kg of fruit (277) is as good as or

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TABLE 1. Medfly emergence from *Prunus ilicifolia* collected at Pohakuloa, Hawaii (6,600 ft. elevation), during 1990.

Collection date	No. fruits collected	Total fruit wt. (g)	Total larvae	Total adults	Larvae/ kg fruit	Adults/ kg fruit	No. fruits infested	Larvae/ infested fruit	Adults/ infested fruit
SEP. 19	400	1,539.1	727	684	472.35	444.42	210	3.46	3.26
NOV. 27	824	4,111.6	922	882	224.49	214.52	715	1.29	1.23
COMBINED	1,224	5,650.7	1,649	1,566	291.82	277.13	925	1.78	1.69

better than that of any of the Hawaiian Medfly hosts studied by Nishida et al. (1985). Because *P. ilicifolia* occurs commonly in mesic chaparral communities throughout California, including foothill and mountain areas adjacent to the Los Angeles basin, it seems possible that this plant could serve as a reservoir host for Medfly there, during the late summer to early winter period when ripe fruit are available. In view of the ongoing controversy over whether or not the Medfly has successfully overwintered in the Los Angeles area in recent years (Barinaga 1990, Carey 1991), it appears to us that this possibility should be investigated.

REFERENCES CITED

Barinaga, M. 1990. Entomologists in the Medfly maelstrom. Science 247:1168-1169.

Carey, J.R. 1991. Establishment of Mediterranean fruit fly in California. Science 253:1369-1373.

Hanes, T.L. 1981. California Chaparral. *In* Ecosystems of the World II, Mediterranean-Type scrublands. F. diCastri et al., Editors. Elsevier Sci. Pub. Co., p. 137-174.

Nishida, T., E.J. Harris, R.I. Vargas and T.T.Y. Wong. 1985. Distributional loci and host fruit utilization patterns of the Mediterranean fruit fly, *Ceratitis capitata* (Diptera: Tephritidae), in Hawaii. Environ. Entomol. 14:602-606.